

REMARKS

The present amendment is prepared in accordance with the requirements of 37 C.F.R. § 1.121. A complete listing of all the claims in the application is shown above showing the status of each claim. Applicant appreciates the thoroughness with which the Examiner has examined the above-identified application. Reconsideration is requested in view of the remarks below.

No new matter has been added.

Allowable Subject Matter**Claims 10-16**

Applicant appreciates the allowance of claims 10-16.

Claim Rejections - 35 USC § 102/103

The Examiner has rejected claims 1-3, 6-9, 17-18 and 21-23 under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as being obvious over Koslow (U. S. Patent No. 6,015,608). The Examiner has also rejected claims 4-5, 19-20 and 24-25 under 35 U.S.C. § 103(a) as being unpatentable over Koslow (U. S. Patent No. 6,015,608).

Independent claim 1, and claims 2-9 dependent thereon, are directed to a composite that includes a first substrate and a bonded mixture. The bonded mixture includes a mixture of binder particles and super-absorbent polymer particles. These binder particles are on average smaller than the super-absorbent polymer particles, and at least some of these binder particles coalesce at least some of the super-absorbent polymer particles to each other and to the substrate. The composite also includes a three-dimensional array of elongated channels, which are formed after the super-absorbent polymer particles contact a liquid.

10

Independent claim 17, and claims 18-20 dependent thereon, are directed to a liquid absorbent pad that includes an outer layer of a substantially liquid-impervious material having an outer surface and an inner surface, and at least one composite segment positioned on such inner surface. The composite segment includes a first substrate and a bonded mixture. The bonded mixture includes a mixture of binder particles and super-absorbent polymer particles. These binder particles are on average smaller than the super-absorbent polymer particles, and at least some of these binder particles coalesce at least some of bonded mixture to the substrate. The composite segment also includes a three-dimensional array of elongated channels after this composite segment is contacted with a liquid.

Independent claim 21, and claims 22-25 dependent thereon, are directed to a liquid absorbent pad. The liquid absorbent pad includes a substantially liquid-impervious material having an outer surface and an inner surface. A composite is positioned on this inner surface. The composite includes a first substrate and a bonded mixture that includes a mixture of binder particles and super-absorbent polymer particles. These binder particles are on average smaller than the super-absorbent polymer particles, whereby at least some of the binder particles coalesce at least some of the bonded mixture to the first substrate. The liquid absorbent pad also includes a three-dimensional array of elongated channels within the composite when this liquid absorbent pad is contacted with a liquid.

In response to Applicant's November 5, 2005 Amendment After Final Rejection, the Examiner suggested that certain types of SAP that exhibit the claimed property of forming three-dimensional channels when in contact with a liquid, such as SP-1224, be included as a claim limitation. Further, the Examiner has suggested that structural

features that would cause the spontaneous channel forming properties also be included.

Applicant has amended claims 1, 17, and 21 to specifically include super-absorbent polymer particles that have a property of forming a three-dimensional array of elongated channels upon contact with a liquid in the manner of SP-1224, and that the three-dimensional array of elongated channels are formed after the super absorbent polymer particles are in contact with a liquid. Specification, p.5, II.21-25. The prior art patent of Koslow (U. S. Patent No. 6,015,608) does not teach, disclose, or suggest a super absorbent polymer that has this property.

Koslow U. S. Patent No. 6,015,608 is directed to a liquid absorbent pad having a plurality of liquid-absorbent laminated segments that include super-absorbent particles, whereby the segments are separated from one another and liquid dams between them prevent water-swollen particles from migrating throughout the pad. Koslow, Abstract. The structure illustrated in FIG. 1 comprises an outer layer 10 of a liquid impervious material having mounted on an inner surface thereof 12 a plurality of laminate segments, such as strips 14a-c, that are identical in construction. Koslow, col.2, II.29-37. These laminate strips 14a-c are separated from one another by spaces 22. Koslow, col.2, II.41-42. Alternatively, rather than strips 14 of laminate, smaller segments, such as squares 30 may be formed. Koslow, col.2, I.65 to col.3, I.3. In either aspect, a weld extends around these segments, traversing the intermediate spaces 22, to form liquid-impervious dams that prevent migration of water-swollen particles between the strips or between segments of the laminated medium. Koslow, col.2, II.50-64.

On page 4 of the January 21, 2004 Office Action, with respect to claims 1 and 17, the Examiner states that Koslow does not explicitly teach the claimed SAP particles

substantially spontaneously form a three-dimensional array of elongated channels upon contact of the composite (claim 17) (i.e., the super-absorbent polymer particles of the composite (claim 1)), with a liquid. Nor does Koslow teach such a three-dimensional array of elongated channels that promotes liquid acquisition into the composite along such channels prior to liquid absorption by the super-absorbent particles. However, in the Examiner's opinion (since Koslow discloses SAP particles), the Examiner takes the position that "it is reasonable to presume that [these] properties are inherent to Koslow." Applicant disagrees.

Applicant submits that Koslow U. S. Patent No. 6,015,608 makes no disclosure or suggestion of super-absorbent particles that form three-dimensional arrays of elongated channels upon contact with a liquid, nor the composites formed therefrom. Rather, it generally discloses SAP particles, which are known in the art. See, Koslow, col.1, ll.24-45. As such, it is submitted that by reviewing the above Koslow patent, one skilled in the art would not understand the nature and operation of the present invention (i.e., that a particular class of SAP particles exist which form three-dimensional channels upon contact with a liquid), such that Koslow 6,015,608 does not anticipate the present invention. *Akzo N.V. v. U.S. Int. Trade Comm.* 1 USPQ2d 1241 (CAFC 1986); *In re Spada*, 15 USPQ2d 1655 (CAFC 1990).

As is recited in the present application at page 5, lines 1-5 and 21-25, the prior art teaches SAP particles that are not capable of forming the channels of the present invention. In the present invention, applicant has now found that a certain class of SAP particles exist which exhibit the unexpected and novel phenomena of forming three-dimensional arrays of elongated channels upon contact with a liquid, such as SAP grade SP-1224 (specification, page 5, lines 1-5 and page 4, lines 23-27). These different

types of non-channel forming and channel forming SAP particles are further demonstrated in Figs. 1-4 of the present application. In particular, Figs. 2 and 4 show a SAP composite having SAP particles that form planar structures upon contact with a liquid, not three-dimensional arrays of elongated channels upon contact with such liquid. On the contrary, Figs. 1 and 3 show a SAP composite of the invention having SAP particles with the now discovered unexpected and novel phenomena of forming three-dimensional arrays of elongated channels upon contact with a liquid.

In view of the specification of the present invention, Applicant's claims are all directed to SAP particles that form three-dimensional channels upon contact with a liquid, they are not directed to all types of SAP particles, particularly those that are non-channel forming. In view of the foregoing, applicant submits that Koslow does not disclose all of the same elements in exactly the same situation and united in the same way as is currently claimed, such that Koslow does not anticipate the present invention.

Moreover, in Koslow, the laminate medium segments are merely separated from one another by spaces 22, whereby welds extend around the segments and traverse the spaces 22 to form dams that prevent migration of water-swollen particles between the segments. Koslow, col.2, ll.29-42 and 50-64. As recognized by the Examiner, these segments and spaces of Koslow are formed prior to any liquid contact, which is not the case with the present invention.

It is submitted that the end product of the claimed invention is a composite having a particular type of SAP particles that have the property of forming three-dimensional array of elongated channels when in contact with a liquid in the manner of SP-1224, whereby these three-dimensional channels promote liquid acquisition into the composite along the three-dimensional channels prior to liquid absorption by the

super-absorbent polymer particles. The structurally different end product of Koslow is a composite containing conventional SAP particles within laminate medium segments separated from one another by spaces 22, and having welding within spaces 22 to form a dam. The end product of the Koslow patent does not have three-dimensional channels that promote liquid acquisition into the composite along such three-dimensional channels prior to liquid absorption by the super-absorbent polymer particles, as is currently claimed.

Applicants also submit that the present invention, as amended, is not obvious over Koslow U.S. Patent No. 6,015,608. In the above office action, the Examiner states that the "prior art has met the limitations of a bonded mixture comprising a mixture of binder particles and super-absorbent polymer particles, (Koslow, column 2, lines 35-45)." The Examiner states that the "Applicant has given no other physical limitations for comparison to the prior art for the bonded mixture, therefore, the Examiner assumes that the 'spontaneous channel forming' property would be inherent."

With the above-mentioned amendments, Applicant submits that the SAP properties congruent with SP-1224 are now claimed, making the present invention patentably distinct over the cited prior art. The Koslow patent does not teach or suggest a class or particular type of SAP particles in the manner of SP-1224 that form three-dimensional array of elongated channels upon contact with a liquid, as is presently disclosed and claimed. Specification, p.5, ll.1-5; p.4, ll.23-27; Figs. 1 and 3.

It is submitted that both the suggestion to make the claimed composition or device or carry out the claimed process and the reasonable expectation of success must be founded in the prior art, not in Applicants' disclosure. *In re Vaech* (CAFC 1991) 20 USPQ2d 1438. The references used by themselves, and not in retrospect, must suggest

15

doing what Applicant has done. *In re Skoll* (CCPA 1975) 187 USPQ 481. Applicant submits that the Koslow patent does not suggest doing what applicant has done, such that applicant's invention is unobvious and would only be found based on applicant's own disclosure, which, of course, would be improper as a hindsight reconstruction of applicant's invention. *Id.*, *W.L. Gore & Associates, Inc. v. Carlöck, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983) (Hindsight based on reading of the patent in issue may not be used to aid in determining obviousness). Likewise, hindsight and the level of ordinary skill in the art may not be used to supply a component missing from the prior art references. *Al-Site Corp. v. VSI International, Inc.*, 174 F.3d 1308, 1324, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999).

In view of the foregoing, and under the applicable patent law, it is respectfully submitted that the claims are properly allowable under both 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).

Respectfully submitted,



Robert Curcio
Reg. No. 44,638

DeLIO & PETERSON, LLC
121 Whitney Avenue
New Haven, CT 06510-1241
203) 787-0595
lxln100006000_2d amd AF